



ELECTRONIC CIRCUIT, METHOD OF DRIVING ELECTRONIC CIRCUIT,
ELECTRONIC DEVICE, ELECTRO-OPTICAL DEVICE, METHOD OF DRIVING
ELECTRO-OPTICAL DEVICE, AND ELECTRONIC APPARATUS

BACKGROUND OF THE INVENTION

1. Field of Invention

[0001] The present invention relates to an electronic circuit, a method of driving an electronic circuit, an electronic device, an electro-optical device, a method of driving an electro-optical device, and an electronic apparatus.

2. Description of Related Art

[0002] It is recently expected that an electro-optical device with low power consumption, a high viewing angle, and a high contrast ratio can be realized, because an organic EL devices have a spontaneous emission element that can be driven with low power consumption.

[0003] For example, one method of driving an electro-optical device that includes a liquid crystal element, an organic EL element, an electrophoresis element, and a field emission display (FED) is an active matrix driving method. An electro-optical device using an active matrix driving method includes a display panel with a plurality of pixel circuits arranged in a matrix. Each of the pixel circuits includes an electro-optical element and a driving transistor for supplying driving power to the electro-optical element.

[0004] According to the driving transistor, because of the variation of characteristics of each pixel circuit, such as threshold voltage, the brightness of the electro-optical device may vary in each pixel, even if data signals corresponding to the same gray scale are supplied.

[0005] In particular, when a thin film transistor is used as the driving transistor, the variation of the threshold voltage is significant. Therefore, a transistor for reducing the variation of the characteristics of the driving transistor is disposed in the pixel circuit see Japanese Unexamined Patent Application Publication No. 2001-147659.

[0006] When a transistor for reducing the variation of the characteristics of the driving transistor is provided in each pixel circuit, the aperture ratio of the pixel circuit is reduced with the reduction in yield. For example, in the case of an organic EL element, when the aperture ratio is reduced, it is necessary to supply as much current as the reduction in the aperture ratio, thereby increasing power consumption and reducing the life of the organic EL element.

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T. Law